

REMARKS

Currently pending in the case are claims 22-28, 33-41, and 47-52. Of those claims 22, 25, 27-28, and 33 are currently amended; claims 23, 24, 26, and 34-41 were previously presented; and claims 47-52 are new. Claims 29-32 and 47-52 are subject to a restriction requirement and are withdrawn.

The Examiner has rejected claims 22-28 and 33-41 under 35 U.S.C. §112, 1st paragraph, as failing to comply with the enablement requirement. The Examiner further states that the claims contain subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains to make and/or use the invention. Applicants have amended the claims and submit that now only claims 49 and 52 pertain to the Examiner's reasons for rejection under 35 U.S.C. §112, 1st paragraph.

Applicants respectfully traverse the Examiner. In the reference cited by Applicants in the supplemental Information Disclosure Statement mailed on 27-Feb-2003, the Arima chapter, taken from a textbook edited by Prudenziati, discusses the desirability of high TCR for resistive temperature detectors (RTDs) and on gas flow sensors, which are based on RTDs. Applicants submit that the desirability of having high TCR for these sensors, as contained in this textbook chapter, is known to those skilled in the art. Applicants further submit that the specification and drawings do provide support for the TCR range in the claims. Specifically, Figure 4 provides TCR experimental data for several materials described in the specification. Also page 9, lines 1-12 of the specification provides TCR data for several materials. The ranges given in claims 49 and 52 correspond to the TCR numbers provided in the text.

The Examiner has rejected claims 22, 24-28, 32, 33, 36, 39, and 40 under 35 U.S.C. §103(a) as being unpatentable over Yamakawa, et al. (US 6,134,960) in view of Manginell, et al. (US 6,527,835). The Manginell, et al. reference was filed on December 21, 2001 and issued on March 4, 2003. Applicants' filing date is October 5, 2000. The subject matter contained in Manginell, et al. is therefore not prior art under 35 USC 102 or 103.

Assuming, for the sake of argument, that Manginell was prior art under 35 USC 102 or 103, the combination of Yamakawa, et al. and Manginell, et al. does not provide Applicants' invention. Both Yamakawa, et al. and Manginell, et al. describe metallic

sensor elements. Specifically, Yamakawa, et al. states in column 8, lines 50-53: "temperature compensating resistors 6a and 6b in the form of heat-sensitive films formed of platinum or the like in a thickness of 0.2 micrometers." And, Manginell, et al. states in column 4, lines 60-63: "Platinum, tungsten, and other refractory metals and alloys have high temperature coefficients of resistance and other material properties that make them preferable for the resistive heating element 13." The Examiner cites Yamakawa, et al., column 1, lines 35-38: "The upstream heat generating resistor 39a and the downstream heat generating resistors 39b have respective outer surfaces each coated with a thin film of alumina or silicon oxide." Applicants submit that this is merely a coating for the resistor and does not comprise part of the resistor element itself. It is respectfully submitted that if current passed through the devices of either Yamakawa, et al. or Manginell, et al., such current would pass through the metal and not through the oxide because the resistance of the metal is far less than the resistance of the oxide. This is in contrast to Applicants' claims 22 and 33: "said electrical circuit responsive to a ratio in resistance between said reference oxide electrically resistive material and said flow-sensing oxide electrically resistive material."

Nowhere in Manginell, et al. or Yamakawa, et al. is Applicants' "oxide electrically resistive material" of claims 22 and 33 disclosed. Because neither reference, either taken singly or in combination, shows Applicants' "oxide electrically resistive material" of claims 22 and 33, Applicant requests withdrawal of the rejections to these claims and withdrawal of rejections to claims 23-28, 34-41, and 47-52 which depend therefrom.

The Examiner has rejected claims 23, 34, 35, 37, and 38 under 35 U.S.C. 103(a) as being unpatentable over Yamakawa, et al. in view of Manginell, et al. and further in view of Ellis, et al. (US 6,180,164). As stated above, Manginell, et al. is not prior art. For the sake of argument, if Manginell were prior art under 35 USC 102 or 103, Applicants submit that there is no motivation to combine Ellis with either Yamakawa, et al. or Manginell, et al. The invention of Yamakawa, et al., as found in column 4, lines 28-33: "it is an object of the present invention to provide a thermal-type flow sensor which is capable of generating a monotonously increasing output over a time period from a reverse flow detection to a forward flow detection with a simplified structure..." Manginell, et al. describe in column 2, lines 32-32: "The present invention comprises a chemical preconcentrator with integral thermal flow sensor." Ellis, et al. state, in

column 2, lines 49-54: "It is an object of this invention to provide a method for forming a ruthenium-based thick-film resistor having copper terminations, in which the thick-film resistor is fired in a non-oxidizing atmosphere so as not to oxidize the copper terminations yet without reducing the thick-film resistor to metallic ruthenium." There is nothing in Yamakawa, et al. or Manginell, et al. to suggest that the resistors be made of anything other than a metallic material. Ellis, et al. describe a simplified process to make ruthenium-based resistors; but, there is no discussion of these ruthenium-based resistors being useful in a flow measuring device or a sensor of any type. Because there is no motivation to combine the references, Applicants' submit that the rejections to claims 23, 34, 35, 37, and 38 be withdrawn.

No other art is cited in the Office Action. Based on the foregoing comments, the above identified application is believed to be in condition for allowance, and such allowance is courteously solicited. If any further amendment is necessary to advance prosecution and place this case in allowable condition, the Examiner is courteously requested to contact the undersigned by fax or telephone at the number listed below.

Please charge any cost incurred in the filing of this Amendment, along with any other costs, to Deposit Account 06-1510. If there are insufficient funds in this account, please charge the fees to Deposit Account No.06-1505.

Respectfully submitted,



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